Савицький Т.П. КВ-83мн

Таблиця 1

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  |  |  |  | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | x4 |
|  |  |  |  | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | x3 |
|  |  |  |  | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 1 | x2 |
| x8 | x7 | x6 | x5 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | x1 |
| 0 | 0 | 0 | 0 | \* | \* | \* | \* | \* | \* | \* | \* | \* | \* | \* | \* | \* | \* | \* | \* |  |
| 0 | 0 | 0 | 1 | \* | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | \* | \* | \* | \* |  |
| 0 | 0 | 1 | 0 | \* | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | \* | \* | \* | \* |  |
| 0 | 0 | 1 | 1 | \* | 0 | 0 | 0 | 1 | 1 | 1 | 0 | 1 | 1 | 1 | 1 | \* | \* | \* | \* |  |
| 0 | 1 | 0 | 0 | \* | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | \* | \* | \* | \* |  |
| 0 | 1 | 0 | 1 | \* | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | \* | \* | \* | \* |  |
| 0 | 1 | 1 | 0 | \* | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | \* | \* | \* | \* |  |
| 0 | 1 | 1 | 1 | \* | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | \* | \* | \* | \* |  |
| 1 | 0 | 0 | 0 | \* | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | \* | \* | \* | \* |  |
| 1 | 0 | 0 | 1 | \* | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | \* | \* | \* | \* |  |
| 1 | 0 | 1 | 0 | \* | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | \* | \* | \* | \* |  |
| 1 | 0 | 1 | 1 | \* | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | \* | \* | \* | \* |  |
| 1 | 1 | 0 | 0 | \* | \* | \* | \* | \* | \* | \* | \* | \* | \* | \* | \* | \* | \* | \* | \* |  |
| 1 | 1 | 0 | 1 | \* | \* | \* | \* | \* | \* | \* | \* | \* | \* | \* | \* | \* | \* | \* | \* |  |
| 1 | 1 | 1 | 0 | \* | \* | \* | \* | \* | \* | \* | \* | \* | \* | \* | \* | \* | \* | \* | \* |  |
| 1 | 1 | 1 | 1 | \* | \* | \* | \* | \* | \* | \* | \* | \* | \* | \* | \* | \* | \* | \* | \* |  |

Х1={ x2, x3, x4, x6 }

Х2={ x8 }

Х3={ x5, x7, x1 }

Таблиця 2

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | x2 | Х1 |
| 0 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | x3 |
| Х2 | Х3 | | | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 1 | x4 |
| x8 | x5 | x7 | x1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | x6 |
|  | | | | D2 | D2 | D2 | D1 | D2 | D2 | D1-D3 | D1-D3 | D2 | D2 | D2 | D3 | D2 | D2 | D1-D3 | D1-D3 |  | |
| 0 | 0 | 0 | 0 | \* | \* | \* | 0 | \* | 0 | \* | \* | \* | 0 | \* | 0 | \* | 0 | \* | \* |
| 0 | 0 | 0 | 1 | \* | 0 | \* | 0 | \* | 0 | \* | \* | \* | 0 | \* | 1 | \* | 0 | \* | \* |
| 0 | 0 | 1 | 0 | \* | \* | 1 | 0 | 1 | 1 | \* | \* | 1 | 1 | 1 | 0 | 1 | 1 | \* | \* |
| 0 | 0 | 1 | 1 | 1 | 1 | 1 | 0 | 1 | 1 | \* | \* | 1 | 1 | 1 | 0 | 1 | 1 | \* | \* |
|  | | | | E3, E5 | E1 | E1 | E2 | E3 | E4 | E1-E5 | E1-E5 | E3 | E1 | E1 | E2 | E3 | E5 | E1-E5 | E1-E5 |
| 0 | 1 | 0 | 0 | \* | \* | 0 | 1 | 0 | 1 | \* | \* | 0 | 0 | 0 | 1 | 0 | 1 | \* | \* |
| 0 | 1 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 1 | \* | \* | 0 | 0 | 0 | 1 | 0 | 0 | \* | \* |
| 0 | 1 | 1 | 0 | \* | \* | 0 | 0 | 1 | 1 | \* | \* | 1 | 0 | 0 | 0 | 1 | 1 | \* | \* |
| 0 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 1 | 1 | \* | \* | 1 | 0 | 0 | 0 | 1 | 1 | \* | \* |
|  | | | | G1 | G1 | G1 | G1 | G1 | G1 | G1 | G1 | G1 | G1 | G1 | G1 | G1 | G1 | G1 | G1 |
| 1 | 0 | 0 | 0 | \* | \* | 0 | 0 | 0 | 0 | \* | \* | 0 | 0 | 0 | 0 | 0 | 0 | \* | \* |
| 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | \* | \* | 0 | 0 | 0 | 0 | 0 | 0 | \* | \* |
| 1 | 0 | 1 | 0 | \* | \* | \* | \* | \* | \* | \* | \* | \* | \* | \* | \* | \* | \* | \* | \* |
| 1 | 0 | 1 | 1 | \* | \* | \* | \* | \* | \* | \* | \* | \* | \* | \* | \* | \* | \* | \* | \* |
|  | | | | H1 | H1 | H1 | H1 | H1 | H1 | H1 | H1 | H1 | H1 | H1 | H1 | H1 | H1 | H1 | H1 |
| 1 | 1 | 0 | 0 | \* | \* | 0 | 0 | 0 | 0 | \* | \* | 0 | 0 | 0 | 0 | 0 | 0 | \* | \* |
| 1 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | \* | \* | 0 | 0 | 0 | 0 | 0 | 0 | \* | \* |
| 1 | 1 | 1 | 0 | \* | \* | \* | \* | \* | \* | \* | \* | \* | \* | \* | \* | \* | \* | \* | \* |
| 1 | 1 | 1 | 1 | \* | \* | \* | \* | \* | \* | \* | \* | \* | \* | \* | \* | \* | \* | \* | \* |

Таблиця 3

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | x2 | Х1 |
| 0 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | x3 |
| Х2 | Х3 | | | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 1 | x4 |
| x8 | x5 | x7 | x1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | x6 |
|  | | | | **D2** | **D2** | **D2** | **D1** | **D2** | **D2** | **D2** | **D2** | **D2** | **D2** | **D2** | **D3** | **D2** | **D2** | **D2** | **D2** |  | |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 |
| 0 | 0 | 1 | 0 | 1 | 1 | 1 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 1 | 1 | 1 | 1 |
| 0 | 0 | 1 | 1 | 1 | 1 | 1 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 1 | 1 | 1 | 1 |
|  | | | | **E3** | **E1** | **E1** | **E2** | **E3** | **E4** | **E4** | **E4** | **E3** | **E1** | **E1** | **E2** | **E3** | **E5** | **E4** | **E4** |
| 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 1 | 0 | 1 | 1 | 1 |
| 0 | 1 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 1 |
| 0 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 1 | 1 | 1 | 1 |
| 0 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 1 | 1 | 1 | 1 |
|  | | | | **G1** | **G1** | **G1** | **G1** | **G1** | **G1** | **G1** | **G1** | **G1** | **G1** | **G1** | **G1** | **G1** | **G1** | **G1** | **G1** |
| 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
|  | | | | **H1** | **H1** | **H1** | **H1** | **H1** | **H1** | **H1** | **H1** | **H1** | **H1** | **H1** | **H1** | **H1** | **H1** | **H1** | **H1** |
| 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

Із Таблиці 3 випливає, що на кортежі <0,0> значень змінних із **X2** коефіцієнт декомпозиції K<0,0> = 4 (є 4 дочірні функції, позначені d1, d2, d3, d4), які не сумісні між собою та поглинають інші. На кортежі <1,1> значень змінних із **X2** коефіцієнт декомпозиції K<0,1> = 5 (є 5 дочірніх функції, позначені e1,e2,e3,e4, e5), які не сумісні між собою та поглинають інші. На інших кортежах K<1,1> = 4, K<1,0> = 3. Крім того, в результаті створення мінімального списку дочірніх функцій можуть бути довизначені значення далеко не на всіх кортежах змінних із **X3**. Довизначення на таких кортежах може здійснюватися по інших критеріях оптимізації, не порушуючи умов поглинання. Таким чином може існувати декілька варіантів оптимального для декомпозиції довизначення функції по Таблиці 1. Один із таких варіантів подано в Таблиці 3. В результаті маємо наступне значення коефіцієнта не розподільної декомпозиції –

**max(Kci )=5**, звідки **r=3**, тобто існує наступне подання функції від 8 змінних:

f(x1,x2, x3,x4,x5, x6,x7,x8)=  
f2(f11(x5,x2,x8,x4,x3, x6), f12(x5,x2,x8,x4,x3, x6), f13(x5,x2,x8,x4,x3, x6), x5,x2,x7,x1).

Таблиця 4

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | X2 | X1 |
| 0 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | X3 |
| X2 | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 1 | X4 |
| X8 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | X6 |
| 0  1 | **D2** | **D2** | **D2** | **D1** | **D2** | **D2** | **D2** | **D2** | **D2** | **D2** | **D2** | **D3** | **D2** | **D2** | **D2** | **D2** |  | |
| **E3** | **E1** | **E1** | **E2** | **E3** | **E4** | **E4** | **E4** | **E3** | **E1** | **E1** | **E2** | **E3** | **E5** | **E4** | **E4** |

D1=000

D2=001

D3=010

E1=000

E2=001

E3=010

E4=011

E5=100

**G1 = H1 = E1**

Таблиця 5

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | X2 | X1 |
| 0 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | X3 |
| X2 | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 1 | X4 |
| X8 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | X6 |
| 0  1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |  | |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 |

Таблиця 6

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | X2 | X1 |
| 0 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | X3 |
| X2 | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 1 | X4 |
| X8 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | X6 |
| 0  1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 |  | |
| 1 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 1 | 0 | 1 | 1 |

Таблиця 7

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | X2 | X1 |
| 0 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | X3 |
| X2 | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 1 | X4 |
| X8 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | X6 |
| 0  1 | 1 | 1 | 1 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 1 | 1 | 1 | 1 |  | |
| 0 | 0 | 0 | 1 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 1 |

Таблиця 8.

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | | | | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | f13 |
| 0 | 0 | 1 | 1 | 0 | 0 | 1 | 1 | f12 |
| Х2 | Х3 | | | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | f11 |
| Х8 | Х5 | Х7 | Х1 |  |  |  |  |  |  |  |  |  |
| 0 | 0 | 0 | 0 |  |  |  |  |  |  |  |  |  |
| 0 | 0 | 0 | 1 |  |  |  |  |  |  |  |  |  |
| 0 | 0 | 1 | 0 |  |  |  |  |  |  |  |  |  |
| 0 | 0 | 1 | 1 |  |  |  |  |  |  |  |  |  |
| 0 | 1 | 0 | 0 |  |  |  |  |  |  |  |  |  |
| 0 | 1 | 0 | 1 |  |  |  |  |  |  |  |  |  |
| 0 | 1 | 1 | 0 |  |  |  |  |  |  |  |  |  |
| 0 | 1 | 1 | 1 |  |  |  |  |  |  |  |  |  |
| 1 | 0 | 0 | 0 |  |  |  |  |  |  |  |  |  |
| 1 | 0 | 0 | 1 |  |  |  |  |  |  |  |  |  |
| 1 | 0 | 1 | 0 |  |  |  |  |  |  |  |  |  |
| 1 | 0 | 1 | 1 |  |  |  |  |  |  |  |  |  |
| 1 | 1 | 0 | 0 |  |  |  |  |  |  |  |  |  |
| 1 | 1 | 0 | 1 |  |  |  |  |  |  |  |  |  |
| 1 | 1 | 1 | 0 |  |  |  |  |  |  |  |  |  |
| 1 | 1 | 1 | 1 |  |  |  |  |  |  |  |  |  |